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PROVISIONAL SPECIFICATION.

Improved Process for Sterilizing and Preserving Liquids and Perishable Matters, and in Apparatus therefor.

We, Dr. CARL OTTO HARZ, Professor at the Royal Veterinary University, and GEORG DEISENHOFER, Engineer, of Kellerstrasse 29, both of Munich, in the Empire of Germany, do hereby declare the nature of this invention to be as follows :—

In existing processes and apparatus for sterilizing and preserving, after the heating is effected and the vacuum formed, air passes into the receptacle or apparatus and the whole sterilising process is rendered useless.

Now our invention has for its object to prevent this which we do by the following process and apparatus. We employ any convenient chamber or receptacle for containing the matters to be treated and cover it by or with a bell shaped or other conveniently shaped cover or lid, this cover or lid being made to depend or lie in liquid and thus to form a sealed joint preventing access of air. The cover or lid is also furnished with an orifice in which is fixed in any convenient way a liquid or other valve allowing of the passage outwards of the expanded gases. When the matters are entirely sterilized the cover or valve is closed and the chamber deprived of its warmth, the air that would consequently come into the chamber is prevented by the sealing fluid which also absorbs all germs &c., contained in the air. The cover may be sealed by india-rubber or by a fluid sealed subsidiary chamber furnished with two pipes one in connexion with the main chamber and the other with the atmosphere.

Dated this 30th day of December 1892.

R. HADDAN,
Agent for Applicants.

COMPLETE SPECIFICATION.

Improved Process for Sterilizing and Preserving Liquids and Perishable Matters, and in Apparatus therefor.

We Dr. CARL OTTO HARZ, Professor at the Royal Veterinary University, and GEORG DEISENHOFER, Engineer, of Kellerstrasse 29, both of Munich in the Empire of Germany, do hereby declare the nature of this invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement :—

In existing processes and apparatus for sterilizing and preserving after heating is effected and a vacuum formed, air passes into the receptacle or apparatus and the whole sterilizing process is rendered useless. Now our invention has for its object to prevent this, which we do by the following process and apparatus.

We employ any convenient chamber or receptacle for containing the matters to be treated and cover it by or with a bell shaped or other conveniently shaped cover or lid, this cover or lid being made to depend or lie in liquid and thus form a sealed joint. The cover or lid is also furnished with an orifice in which is fixed in any convenient way a plug or a liquid or other valve allowing of the passage outwards of the expanded gases. When the matters are entirely sterilized the cover or valve is closed and the chamber being deprived of heat, the air that would consequently come into the chamber is prevented by the sealing liquid which also absorbs all germs *etc.* contained in the air. The cover may be sealed by caoutchouc or by a

fluid sealed subsidiary chamber furnished with two pipes, one in connection with the main chamber, and the other with the atmosphere.

The annexed drawings will serve to illustrate modes of performing the invention, Figs. 1, 2, and 3 showing three arrangements in vertical section.

G is the sterilizing vessel and is covered by a bell-shaped lid *b*, the closing being effected by a closing fluid, as shown in Figs. 1 and 2 where the lid dips into a liquid whereby the matters to be sterilized are guarded against the access of air.

The apparatus being heated, the expanding air and vapour will come out either through the open cover at *d* or when the air and vapour are but little expanded and the cover remains closed, the closing fluid becomes depressed to the perforations *l* in the side of the cover, and the vapour is able to escape thereby.

When the matters are entirely sterilized, the cover is closed by any convenient plug *d* and the vessel deprived of heat, and on subsequently cooling, air will come into the vessel which however can only happen by penetrating the closing fluid, which absorbs all germs, atoms of dust *etc.* contained in the air, so that a reinfection of the sterilized matters in the apparatus is prevented.

The closing of the apparatus can be mechanically effected as shown in Fig. 3. where the cover *b* is connected to a fluid vessel a^1 through the rubber plug *d* as shown, this fluid receptacle being in connection with one pipe leading into the vessel and one in the atmosphere as shown.

When the heating of the vessel is finished, the air that afterwards penetrates in consequence of the vacuum originated in cooling will first pass through the liquid in the vessel a^1 before arriving at the sterilizing vessel, by which means this air will be freed from dust and germs.

Having now particularly described and ascertained the nature of this invention and in what manner the same is to be performed we declare that what we claim is.

1. Improved process of sterilizing or preserving the status of sterilization of matters of any description, whereby the air which enters the sterilizing vessel during the cooling down of the matter is forced to take its way through an interposed liquid whereby germs and impurities contained in such air are kept from the matter sterilized.

2. Improved apparatus serving to carry out the process described in Claim 1 being the sterilizing vessel, receptacle or reservoir arranged for receiving a liquid through which the air entering the vessel during the cooling process is forced to pass before reaching the sterilizing chamber or matter therein.

All substantially as illustrated and described and for the purposes set forth.

Dated this 28th day of September 1893.

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